

REMARKS / ARGUMENTS

I have amended Claims 1-13 and Claim 15 and canceled Claim 14. Support for claim amendments may be found throughout the specification and drawings as originally filed.

Specifically, I have amended Claim 1 to include the upper and lower drives are compatibly configured with the remaining stub. Figure 6 depicts an artificial finger wherein the upper and lower drives are compatibly configured to the remaining stub.

Allowable Subject Matter

The Examiner has indicated that Claims 5-6, 13 and 15 include allowable subject matter and are objected to as being dependent from a rejected base claim. I have retained original claims 5-6, 13 and 15 and have amended rejected claim 1. Thus I respectfully request this objection be withdrawn.

Response to Claim Rejections – 35 USC §101

The Examiner has rejected Claim 1 as being unpatentable under 35 USC §101. The Examiner alleges Claim 1 claims the stub, which is nonstatutory subject matter.

Claim 1 is directed to statutory subject matter. However to expedite allowance of the application, I have amended Claim 1 to clarify the statutory subject matter. Thus I respectfully request this rejection be withdrawn.

Response to Claim Rejections – 35 USC §112

The Examiner has rejected Claims 3 and 15 under 34 USC §112 second paragraph as being indefinite of failing to particularly point out and distinctly claim the subject matter, which Applicant regards as the invention.

I have amended Claim 3 and have canceled Claim 15. I have changed the word “means” to “connecting rod” in Claim 3 to distinctly claim the subject matter. The connecting rod is not considered new subject matter and can be found in Figures 6 and 8 labeled as connecting rod (35). I respectfully request this rejection be withdrawn.

Response to Claim Rejections – 35 USC §102

The Examiner has rejected Claims 1-4, 7-11 and 14 under 35 USC §102(b) as being anticipated by Bashore (319,776). Bashore (319,776) does not anticipate my invention for reasons set forth on the following page.

The novel feature of my invention over Bashore (319,776) is that my device offers a partial finger amputee the ability to regain control of the replaced artificial phalangeal segments beyond that particular partial finger, independent of any assistance from an opposing finger or partial finger. The movement of the residual limb independently controls the articulation of the replaced artificial phalangeal segments, which are configured beyond the articulating residual limb. My invention pertains to a partial finger amputee who would like to regain control of the missing phalangeal segments of that particular partial finger. Bashore (319,776) pertains to an amputee who has lost an entire finger and portion of the hand, and would like to replace the entirely missing finger with an assembly, which can only be articulated by mirroring the movement of an opposing finger or opposing partial finger.

While the Bashore (319,776) describes a device, which also can be controlled by a residual limb, the device the residual limb can control is an opposing artificial finger and not the remaining segments beyond the controlling residual limb. When studying Figure 2 in Bashore (319,776), it is apparent that the artificial finger (Y) replaces an entirely missing finger, from the tip extending back through a narrow slot (E), in the hand-socket. Not only does Figure 2 show the artificial finger (Y), as an entire finger, but the slot (E) also shows a residual limb could not be partially inserted into the artificial finger (Y) offering a means to articulate the assembly. Although Bashore (319,776) describes a device whereby a partial finger can articulate a rock-shaft, which in turn can articulate an entire artificial finger, he offers no means for a residual limb to control the missing phalangeal segments beyond the residual limb.

If Bashore (319,776) had envisioned a device in which case a residual limb was able to control the remaining segments of the residual limb, he would have done at least one of the following four things, if not all four. First, he would have left ample space in the front of the hand socket (X), clearly seen in Figure 3, for a residual limb to pass into the artificial finger. Having narrow spaces for guide's shows he envisioned his device replacing an entirely missing finger. Because he utilized the front surface of the hand socket (X) to stabilize components, this shows he had not envisioned a partial finger to be inserted into the artificial finger (Y). Bashore (319,776) offers assistance for a full finger amputees only, and can not aid anyone who has only lost a portion of their finger. For a residual limb to be inserted into the artificial finger (Y), a hole would have to be made on the front surface of hand socket (X), as large as the inner circumference of the working socket. The hole cut in the hand-socket (X) would have to be larger than the circumference of the working socket to allow the residual limb to move freely when articulating the assembly. The front surface of hand-socket (X), where the artificial finger is attached, utilizes this space to house the mechanics through narrow slots. Therefore, Bashore (319,776) did not envision the possibility of a residual limb to be inserted into the artificial finger. Second, he would have included a figure showing the working socket with the replacement phalangeal sections attached beyond the working-socket in cases, where a partial finger or partial thumb is controlling the device. This would have shown he envisioned the residual limb doing something other than controlling the rock-shaft. Although by studying Figure 2 it becomes evident that a partial finger could control his device, there is no evidence his device could replace the missing phalangeal segments beyond the working-socket. Third, he would have mentioned replacing the missing phalangeal segments somewhere in the patent Bashore (319,776) does not mention a residual limb doing anything except controlling the rock-shaft in the hand-socket. Although a partial finger can articulate an entirely missing finger on the Bashore (319,776) embodiment, there is no evidence that he envisioned a way to eliminate his rock-shaft in the hand socket which controls the artificial finger. The Bashore (319,776) does not allow a residual limb to assist in articulating phalangeal segments, which replace the missing segments of that specific limb. The fourth reason Bashore (319,776) did not envision a device whereby a residual limb could be inserted into the artificial finger (Y), is due to the location of the central toggle lever (I), shown in figure 4. When studying the location of the vertical ratchet

lever (I) in Figure 4, the drawing shows the lever (I) extending to the planar surface of the finger. Therefore its placement must be near the center when you imagine looking at a rear view of the circumference of finger (Y), in the location surrounding the toggle lever (I). If the circumference of the finger (Y) had been drawn square instead of spherical in figure 2, it would be difficult to determine the location. Because the lever (I), is located at the planar surface of the artificial finger (Y), which has a spherical circumference, the only location the lever (I) could fit within the confines of the artificial finger, would be near the center of the finger, conflicting with a residual limb. Because the space utilized is in the center of the device, this offers more evidence that Bashore (319,776) did not envision a device utilizing this space for a residual limb. Because a residual limb can not be inserted into his artificial finger and he does not mention replacement phalangeal segments beyond the working socket, Bashore (319,776) did not envision a device where a partial finger can regain control of the replaced phalangeal segments of the same finger. Now the novel function of my device can be seen. My invention allows a partial finger amputee the ability to regain active function of the remaining phalangeal segments in a device, which is not dependent on any other finger or any other partial finger for a means of articulation. While Bashore (319,776) utilizes leverage to articulate a finger assembly, prior references have not envisioned a combination of reciprocally interconnected levers to aid a partial finger amputee in articulating the missing phalangeal segments of the partial finger controlling the device.

While a partial finger or thumb or a whole finger or thumb can control the Bashore (319,776) device, the device is replacing an entirely missing finger. Because the articulating assembly replaces an entirely missing finger, the amputated finger the device is replacing can not be considered a partial finger or partial thumb. Also, by reviewing the figures it is evident that a partial finger could not be inserted into the Bashore (319,776) artificial finger (Y). Therefore Bashore (319,776) did not envision a device whereby a partial finger could manipulate the missing segments of device independent of the articulation of an opposing finger. The novel feature of the Applicants invention is that it allows independent control of missing phalangeal segments, all of which is controlled by the residual limb inserted into the device. Independent articulation of fingers is necessary in numerous scenarios where two fingers moving in unison would be a disadvantage. While in situations where moving in unison is favorable my device can

not only do this, but allows combined lateral movement as well. The Bashore (319,776) device only allows the finger to move in a vertical plane and does not move laterally.

One example where my device can alleviate a problem which prior devices can not solve is described below. If a deaf individual, who uses sign language to communicate, loses a portion of their finger, various signs will no longer be able to be achieved. My device will allow this individual to apply the assembly and immediately begin to sign again. The remaining segments will naturally articulate, reflecting the prior fingers natural range of motion. Prior devices offer no assistance for anyone who has lost a portion of their residual limb and would like to regain control of the articulation of the replaced segments. Prior devices can only aid individuals who have an entirely missing finger and the artificial finger will mirror the movement of an opposing finger or partial finger. This type of device could not aid in making various sign language configurations where independent articulation of the fingers is necessary. This problem occurs in numerous scenarios where independent control is necessary and mirrored control would be a disadvantage. Examples include playing a musical instrument such as a piano or when typing on a keyboard.

To expedite allowance, I have amended the 1st claim, which shows the novelty over prior art. The second to last line of the 1st claim, now reads “ said upper and lower drives are compatibly configured with said remaining stub.” While prior devices utilize leverage to articulate a finger assembly, the transversely connected levers forms the second knuckle segment in Bashore (319,776). The first knuckle segment in Bashore (319,776) is in the hand socket, controlled by the rock-shaft. I have more clearly described the device to assist in the understanding of my invention, as shown in figures 6,8,9,10,11 and respectfully request this rejection to be withdrawn.

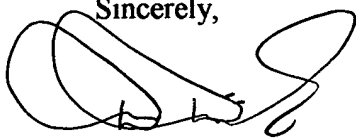
Response to Claim Rejections – 35 USC §103

The Examiner has rejected Claim 12 under 35 USC §103(a) as being unpatentable over Bashore (319,776) in view of Rincoe (5,062,855). The present invention is not obvious over Bashore (319,776) in view of Rincoe (5,062,855). However to clarify and expedite allowance of the present application, I have amended Claim 1 as previously provided and discussed.

Rincoe (5,062,855) has invented a method of articulation, which is caused by reversing the polarity of at least two magnets, which utilizes a conductive inner surface of a glove. While a finger-like segmented assembly is shown, it can not replace the missing segments of a partial finger amputee in a self-contained device. Rincoe (5,062,855) has described a device that can articulate by way of an electromagnet. Electromagnets require a power supply and therefore could not be configured to replace the missing phalangeal segments of a partial finger amputee in a self-contained device. Rincoe (5,062,855) does not describe a self-contained device within a finger sheath within the patent. Because a finger assembly is shown in the figures as the actuating device, please keep in mind this is not all of the components necessary to articulate the device, which would drastically increase the size needed to house the components. While Rincoe (5,062,855) describes the use of an outer skin, it is labeled as a glove representing an entire hand. The cited references, Bashore and Rincoe, either alone or in combination fail to suggest or teach the articulated artificial finger assembly in the presented configurations. Thus the cited references, either alone or in combination, do not teach each element of the claims as filed or as amended.

I respectfully request all rejections to be withdrawn and all pending claims be allowed. Also, I would greatly appreciate any guidance to help expedite the patent process. Further I hope that this application has not burdened the Examiner due to the inexperience regarding the patent process. Thank you for your time and please feel free to contact me anytime regarding the application at 239-592-6778.

Sincerely,

A handwritten signature in black ink, appearing to read 'Daniel Didrick', with a large, stylized loop at the end.

Daniel Didrick
Inventor